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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,962	08/22/2001	Santhana Krishnamachari	PHA 23-431A	9618

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EXAMINER

WU, JINGGE

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/934,962

Applicant(s)

KRISHNAMACHARI, SANTHANA

Examiner

Jingge Wu

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 28 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to amendment***

In view of the Applicant's Declaration and argument, the rejection under 35 USC 102 (e) based on US 6285995 is expressly withdrawn.

Applicants' amendment has required new grounds of rejection. New grounds rejection are therefore presented in the Office Action.

Applicant's arguments with respect to claims 1-5, and 11-15 have been fully considered but are moot in view of the new ground(s) of rejection.

***Remark***

Applicant's arguments with respect to claims 6-10 and 16-20 have been fully considered, but they are not persuasive.

Applicant argues that "Sato does not perform a comparison of frequency of occurrences of colors in each region of an image, as specifically claimed" in the claim 6 and 16. Also, "each frequency of occurrence is used to determine whether an entry is to be made to the index table. Once the entry is made, or not, the frequency of occurrence is not used again".

Examiner disagrees. As well known concept in the image processing, frequency of occurrences (pixels) is characterized by the histogram. Sato discloses "calculates the color histogram of pixel data in units of blocks" (col. 25, lines 46-47, note that this is the local histograms of blocks). In addition, Sato teaches using a feature vector  $C_i$ , which formed by counting the number of pixels in a range (frequency of occurrence, Fig. 43, col. 25, 51-62). Furthermore, Sato discloses determining a index table by comparing

Ci which is representation of the frequency of occurrences of a block (region) to a threshold to form an index table. The index entry is Ci (Fig. 45). Then, contrast to Applicant's assertion "the frequency of occurrence is not used again", Sato further discloses searching the image in a database by comparison the index table (col. 27, lines 15-25, note that Fifth embodiment which details the sixth embodiment (col. 24 lines 4-26) teaches comparing the colors (in here, Ci of a region is the color and also represents the frequency of occurrences). Thus, the high speed image searching is achieved. Therefore, Sato indeed discloses the limitation of claims 6 and 16 which comparing the frequency of occurrence of a selected set of colors (Ci) in each first partition (block) with the frequency of occurrence of a corresponding selected set of colors in each second partition.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by US

6181818 to Sato et al.

As to claim 1, Sato discloses a method for charactering an image comprising:

partitioning the image into a plurality of partitions with color pixels (col. 25 lines 25-50); and

determining a frequency of occurrence of each color within the partitions (col. 25, lines 46-50).

creating a characterization that includes a plurality of measures that are proportional to the frequency of occurrence of a plurality of colors (Fig. 43, col. 25, lines 56-62, note that  $C_i$  is the characterization).

As to claim 2, Sato further discloses quantizing the color (col. 25 lines 51-62).

As to claim 3, Sato further discloses the steps of:

identifying colors based on the local color histograms (col. 25 lines 46-50); and the plurality of measures ( $C_i$ ) includes proportions of each of the plurality of populous colors (number of pixels for each color) in each partition (Fig. 43, col. 25, lines 12-62).

As to claim 4, Sato further discloses the steps of:

identifying the color centers (col. 30 lines 15-23); and determining the color based on the color distance (col. 30 lines 15-40 and col. 24, lines 4-19).

As to claim 5, the discussion is addressed with regard to claim 3.

As to claim 6, Sato discloses a method of comparing a first image to a second image, comprising:

partitioning first and second image (col. 25, lines 12-45, note that the blocks is the partitions);

determining/creating local color histograms for the partitions (col. 25 line 46-col 26 line 61, See remark); and

comparing the color histograms of the two images (col. 25, line 47-col. 28 line 20, see remark).

As to claims 7-10, the discussions are addressed with regard to claim 2-4.

As to claims 11-15, the discussions are addressed with regard to 1-10.

As to claim 16, Sato discloses a system for comparing a first image to a second image, comprising,

a similar color determinator (col. 27 line 41-col. 28 lines 20) that is to determine:  
a mapping between two set of colors of the two images (col. 24 lines 4-37, col. 28 lines 3-20, and col. 30, lines 16-40, see remark); and

the similarity determinator comparing the two images based on the local histograms to determine the similarity measure (col. 24 lines 4-37, col. 28, lines 3-20 and col. 30, lines 16-40, see remark).

As to claim 17, Sato further discloses the accumulator (buffer 246) to provide the image similarity measure (col. 28, lines 3-20), other elements are addressed with regard to claim 16.

As to claim 18, Sato further discloses the similarity measure is determined by calculating the color distances (col. 24 lines 3-19 and col. 28 lines 3-20).

As to claims 19-20, the discussions are addressed with regard to 2-4.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Contact Information**

Application/Control Number:  
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1. Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu

Patent Examiner

JINGGE WU  
PATENT EXAMINER

Art Unit 2623

7/6/02